Name ________________________________

1. (5 points) On the interval \([1, 3]\), the region \(R\) is bounded below by the \(x\)-axis and above by the graph of \(y = \frac{1}{x^2 + 1}\). Revolve \(R\) around the \(y\)-axis and compute the resulting volume.

2. (5 points) What definite integral represents the length of the curve \(f(x) = \ln x\) on the interval \([1, 5]\)? You do not need to evaluate this integral.